

LXIII.—*On some new Japanese Mammals presented to the British Museum by Mr. R. Gordon Smith.* By OLDFIELD THOMAS, F.R.S.

THE National Museum owes to the kindness of Mr. R. Gordon Smith an interesting collection of small mammals obtained by him in Japan. The majority are from Kobe, but he has also sent a number collected at Misaki, near Yokohama, by a Japanese, Mr. H. Tsuchida.

Most of the species are, of course, described in Temminck and Schlegel's 'Fauna Japonica,' but the following seem to represent new species or subspecies, and include a vole which, although allied to the red-backed voles (*Evotomys*), is so distinct that I have had to make a new subgenus for it. It forms, therefore, a most interesting discovery.

Mogera wogura kobee, subsp. n.

Similar in colour and other characters to typical *M. wogura*, but markedly larger.

Dimensions of the type (measured on a spirit-specimen):—

Head and body 143 mm.; tail 20; hind foot, s. u. 21, c. u. 24; fore foot, length (c. u.) 26, breadth 20.

Skull: greatest length 39; basal length 34; greatest breadth 18.7; front of canine to back of m^3 14.7; front of lower cariniform premolar to back of m_3 12.8.

Hab. Kobe, Hondo. Altitude about 60 m.

Type. Adult female. B.M. no. 82. 7. 27. 12. Collected 2nd June, 1875, during the cruise of H.M.S. 'Challenger.' Five specimens examined.

While the fine series of the ordinary Japanese mole, *M. wogura*, from Misaki, near Yokohama, sent home by Mr. Gordon Smith are all very uniform in size (skulls 34–35 mm.; hind foot, s. u., about 18 mm.), the four he has sent from Kobe are all markedly larger, and it is evident that we have here to do with two local forms, though they will probably prove to pass one into another in the intermediate districts.

No typical locality is given in Temminck's original description of *Tolpa wogura**, but an example sent in 1843 from the Leyden Museum as representing that form agrees in size with the Yokohama race, and I have therefore taken that as the typical one. The original figure of the skull is 35 mm. in length.

* 'Fauna Japonica,' Mamm. p. 19 (1842).

The 'Challenger' also obtained three specimens of true *wogura* from Yokohama, besides the example of *M. w. kobee* which I have selected as the type.

Although much larger than true *M. wogura*, this mole falls far short of the large form from Vladivostok named by Dr. Nehring *M. robusta* *.

Petaurista leucogenys and its subspecies.

Mr. Gordon Smith has sent several specimens of the large Japanese flying-squirrel, and I have carefully examined these and the specimens already in the Museum collection.

The original locality of Temminck's *Pteromys leucogenys* was the mountains of Figo (= Higo) and Fiuga, in the island of Kiusiu, so that specimens sent from Nagasaki, in the same island, may be provisionally treated as typical.

These are very dark above, with their under surface white or nearly white, not or scarcely washed with buffy, their lips with but little greyish white on them, a well-marked blackish patch below the eye and another below the ear, the characteristic light cheek-patch greyish and not sharply contrasted.

From this Kiusiu animal there may be distinguished the following three subspecies:—

P. l. nikkonis, subsp. n.

Fur particularly long and tail bushy. General colour paler, more greyish brown or drab. Under surface white. Muzzle whitish. Below eye greyish brown. Light cheek-patches snowy white, very prominent.

Nikko, central mountainous region of Hondo.

P. l. oreas, subsp. n.

Colour above rich brown, warmer than in the Kiusiu form, and suffused with rufous on the head. Under surface washed with buffy. Patch below eye dark rufous, like forehead. Light cheek-patch dull greyish, inconspicuous, washed with buffy.

Wakayama, southern peninsula of Hondo.

P. l. tosa, subsp. n.

Colour above an intermediate brown. Hairs of under surface slaty at base, washed with buffy terminally. Lips whitish. Patch below eye greyish brown, not blackish,

* SB. Ges. nat. Fr. Berl. 1891, p. 96.

succeeded behind by a fairly prominent light check-patch, and a dull fulvous one below and behind the ear. Hinder end of nasals squarely truncated.

Tosa, island of Sikoku.

Detailed descriptions of the new forms:—

Petaurista leucogenys nikkonis.

Fur very long, soft, and thick; hairs of back 50–60 mm. in length, the underfur about 40–45. General colour above comparatively pale, a greyish drab, rather paler than Ridgway's "drab." Individually the longer hairs are greyish basally, with a broad whitish or buffy whitish subterminal band and a fine black tip; the abundant underfur slaty, with about 5 mm. at the tip clay-colour. Laterally the hairs are shorter and the colour becomes more buffy brownish; a broad patch at the end of the patagial cartilage deep ochraceous buff. Under surface either pure white or faintly washed with buffy; no slaty bases to the hairs; a small blackish spot on the chin. Head coloured above like back or a little more buffy, becoming greyish on the nose and whitish round the mouth; cheeks below eyes broccoli-brown; light check-patch very conspicuous, pure white, most of the hairs white to their roots, extending up on to the crown in front of the ears and downwards nearly to meet the white of the throat. Ears surrounded by a buffy area, with scarcely a trace of a black patch at their posterior bases. Forearms dark grey, little mixed with the buffy rings on the longer hairs; hands dark brown. Hind limbs with the dull buffy of the sides extending on to the middle of the metatarsus, its sides and the digits brownish black. Tail short, thick, very bushy, its breadth across the outstretched hairs about 150 mm.; in colour above and below it is of about the same greyish drab as the back.

Skull as in typical *leucogenys*, the nasals similarly projecting backwards behind the premaxillary processes.

Measurements of the type:—

Head and body 420 mm.; tail 280; hind foot (s. u.) 67.

Skull: greatest length 68.5; basilar length 54; nasals, length 23; length of upper tooth series without anterior premolar 14.5.

Hab. Nikko, Central Hondo.

Type. Male. B.M. no. 5. 1. 4. 50. Original number 31. Collected by H. Ogawa, and presented by R. Gordon Smith, Esq. Six specimens examined.

Ann. & Mag. N. Hist. Ser. 7. Vol. xv.

33

A young specimen sent by Mr. Maries to the Museum in 1880 lived in captivity from May to August 1879, when it died. It has well developed the peculiar greyiness of the back, which cannot therefore be a mark of the winter coat.

Besides one example of the normal colour, a beautiful semialbinistic specimen of a creamy buffy tone was obtained from Mr. Alan Owston in 1900.

Petaurista leucogenys oreas.

General colour dark, between "vandyke-brown" and bistre, the subterminal rings on the hairs dull buffy; outer part of parachute black, sparsely lined with buffy, the forearms and hands deep black; patch at end of patagial cartilage dark buffy. Hairs of under surface of body dull whitish tipped with buffy, slightly plumbeous at their bases, those of underside of patagium bright buffy throughout except on a patch just behind the carpus, where they are black. Head on muzzle and crown more rufous than back, near "burnt umber." Lips and light cheek-patch dull greyish, little conspicuous, the hairs slaty basally, greyish white terminally. Area below eye dull reddish brown, continuous with the rufous, which passes downwards on to the sides and front of the neck. Chin with a black spot. Upper surface of feet black, with a slight trace of buffy tipping on the centre of the metatarsus. Tail long, not unusually broad, breadth across outstretched hairs about 125 mm.; its general colour dull cinnamon, the hairs slaty at base.

Skull with its nasals as in true *leucogenys*.

Dimensions of the type (measured in skin):—

Head and body 450 mm.; tail 380; hind foot (s. u.) 73; ear 29.

Skull: length of nasals 25, of tooth-row without p^3 14.5.

Hab. Wakayama, Southern Peninsula of Hondo.

Type. Female. B.M. no. 3. 5. 18. 1. Collected and presented by R. Gordon Smith, Esq.

Petaurista leucogenys tosaë.

General colour above intermediate between the dark *leucogenys* and the light *nikkonis*, about matching Ridgway's "hair-brown," subterminal bands on hairs cream-buff; ends of underfur drab-brown. Under surface dingy whitish, the hairs slaty at their bases and washed with buffy terminally. Head brown, not reddish, the top of the muzzle inclined to buffy. Lips and light cheek-patch greyish white, the hairs slaty at base, the cheek-patch not extending up on to the

crown and not very conspicuous. Area below eye broccoli-brown, not blackish. Forearms and hands dark brown, a small patch of buffy-tipped hairs on the metacarpus. Hind feet only blackish along the edges and on the digits, the metatarsal hairs being largely tipped with dull buffy. Tail fairly similar to the body, but rather more tinged with clay-colour.

Skull distinguished from that of the other forms by the nasals being abruptly and squarely truncated behind at a level with the tips of the premaxillary processes.

Dimensions of the type (measured in the flesh):—

Head and body 382 mm.; tail 280; hind foot 66.

Skull: greatest length 66; basilar length 51.7; length of nasals 23; upper tooth-row without p^3 14.6.

Hab. Tosa, island of Sikoku. Alt. 300 m.

Type. Female. B.M. no. 5. 3. 3. 17. Collected 4th December, 1904, and presented by R. Gordon Smith, Esq. Two specimens.

Micromys geisha, sp. n.

A delicate species, about equal in size to one of the smaller forms of *Mus sylvaticus*, though with more the build and look of a large harvest-mouse.

Size small, form slender. Fur soft and fine, without spines, hair of back about 6 mm. in length. General colour above pale reddish brown, rather warmer and redder than Ridgway's "wood-brown," the head and forehead slightly paler than the rump. Under surface white, sharply defined laterally, the basal two thirds of the hairs dark slaty. Ears rather short, pale brown, with a fine white edging. Outer side of upper arms and hips reddish grey; inner sides, wrists, hands, and feet white. Soles wholly naked, last foot-pad elongated; fifth hind toe (s. u.) reaching nearly to the end of the first phalanx of the fourth. Tail of medium length, thinly haired, coarsely scaled, the scales not alternated, but forming distinct rings, averaging about twelve to the centimetre; both scales and hairs brown above and white beneath, but the contrast not conspicuous. Mammæ apparently 2—2=8, but this numeration is not absolutely certain.

Skull very smooth, light, and delicate, rounded and without ridges, the supraorbital edges hardly squared even in the oldest example. Anteorbital plate straight-edged in front, scarcely projected forwards in advance of the upper bridge. Palatal foramina of medium length, not extending backwards to the front of m^1 . Mesopterygoid fossa wide and rounded in front, narrowing posteriorly. Bullæ normal. Molars small,

of normal structure, a well-marked antero-external secondary cusp on m^2 , as well as the usual large antero-internal.

Dimensions of the type:—

Head and body (c.) 85 mm.; tail 95; hind foot (s. u.) 19; ear 12.5.

Skull: greatest length 24; basilar length 17.5; zygomatic breadth 12; nasals 8; interorbital breadth 3.7; breadth of brain-case 11; palate length 10.4; diastema 6.5; palatal foramina 4.7×1.7 ; length of upper molar series 3.4.

Hab. Kobe, Hondo. Alt. 300–400 m.

Type. Male. B.M. no. 5. 3. 3. 37. Collected May 1904. Presented by R. Gordon Smith, Esq.

This pretty little mouse is quite unlike any Eastern Asian species with which I am acquainted. *Mus argenteus*, Temm., whose description might have been thought to apply to it, is a larger animal, with a hind foot of 22 mm., and many differences in the detailed measurements of the skull, *e. g.* interorbital constriction 4.9 mm., palatal foramen 5.8.

With regard to the use of the generic name *Micromys* for this animal, I have come to the conclusion that the correct and natural division of the European species of "*Mus*" published by Hensel in 1856*, and supported by Forsyth Major † in 1884, should be followed, and that while *Mus rattus*, *norvegicus*, and *musculus* should remain in *Mus*, the others should be placed in a separate genus, for which the name *Micromys* is available.

In this genus the posterior laminae of the first and second upper molars have each an additional internal cusp beyond the number present in *Mus*; so that, counting along the inner side of the tooth-row, there are three cusps on the first molar and three on the second, while in *Mus* the posterior lamina is not continued inwards beyond the centre, and there are therefore only two inner cusps on each of the two teeth.

The following species, with their respective near allies, show this character:—

- Micromys sylvaticus*, L.
- *speciosus*, Temm.
- *minutus*, Pall. (Type of genus ‡.)
- *mystacinus*, Danf. & Alst.
- *agrarius*, Pall.
- *Harti*, Thos.
- *geisha*, Thos.

* Zeitschr. deutsch. geol. Gesellsch. 1856, p. 281.

† Atti Soc. Tosc. Proc. Verb. iv. p. 129 (1884).

‡ Dehne, 1841.

In no Oriental or Australian species are the molars of this character, but among the African forms, although in the great majority as in typical *Mus*, those of *Mus arborarius*, Peters, and *M. rutilans*, Peters, are almost precisely as in *Micromys* and appear to indicate a real relationship to that genus.

In view of the immense number of species of *Mus* known and the difficulty of dividing them into natural groups, it is of great value to be able to separate off any section of them by essential characters, however slight these may appear to be.

Evotomys (Phaulomys) Smithii, subgen. et sp. nn.

PHAULOMYS *, subgen. nov.

External proportions and other characters as in *Evotomys*, although the colour tends more towards brown than the usual red of *Evotomys*.

Skull with the smooth non-angular brain-case characteristic of *Evotomys*; zygomata more widely splayed; posterior palate typical; bullæ unusually small.

Teeth not rooted in the only specimen, which is fully adult; therefore if rooted at all they must only become so very late in life, as in *Craseomys*. Base of second upper molar in a distinct capsule at the bottom of the orbital fossa and that of the last lower molar similarly encapsuled on the inner side of the incisor-root, both as in *Craseomys* and *Microtus*, not as in *Evotomys*. Molars very weak and narrow (breadth of m^2 barely more than half its length, 0.8 mm. as against 1.5), the few closed triangles not or scarcely broader than long. General structure of teeth showing an exaggeration of the *Evotomys* characters of rounded cement-areas and coalescence of opposite spaces (see figure, p. 494). Last upper molar more simple than in *Evotomys*, its second and third spaces coalesced into one. Below the anterior molar is also remarkably simple, and in all three teeth the outer re-entrant angles are nearly as deep as the inner.

This interesting form adds another to the considerable number of aberrant Asiatic voles, and, as with *Antheliomys* and *Eothenomys*, the exact value that should be given to it is by no means clear. While it has the rounded skull, round-angled teeth, and external form of true *Evotomys*, it has the encapsuled m^2 and m_3 of *Craseomys*, *Antheliomys*, and normal

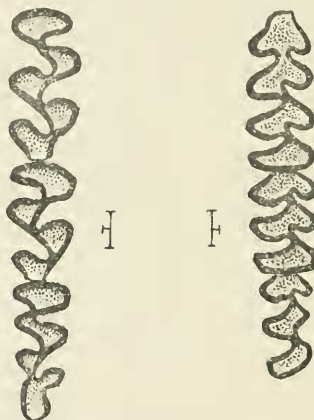
* φαῦλος = weak.

voles, while its molar pattern and narrow teeth are peculiar to itself. On the whole, it may best be called a subgenus of *Evotomys* until such time as the whole group is again revised, when it will very probably receive with others the dignity of full generic rank.

The species may be described as follows:—

Size about as in *Evotomys glareolus*. Fur soft and loose; hairs of back about 10 mm. in length. General colour above a light brown, not far from “russet” of Ridgway, without the warmer and more reddish tone of true *Evotomys*. Sides and rump not conspicuously or abruptly greyer than the back. Under surface cream-buff, not sharply defined, and mixed with the slaty of the hair-bases; throat grey. Ears about as long as the fur, well-haired, brown. Upper surface of hands and feet dull greyish; soles hairy from the heel to the pads. Tail about two thirds of the trunk-length, well-haired, the terminal pencil about 3 mm. in length; dark brown above, pale greyish below.

Skull as described above.



Evotomys (Phaulomys) Smithii. Upper and lower molars, right side.
× 10.

Teeth (see figure).—First and second upper molars with the usual five and four cement-spaces respectively. Third molar with the normal anterior space, and the second and third half opposite to each other and combined in one; then follows a terminal Y, the antero-external corner of it almost separated into a distinct space; this tooth has three prominent angles and one additional indistinct one on each side. Anterior

lower molar with only four simple spaces, one in front of the others, the anterior representing the front triangle, the second the normal second and third, and the third the normal fourth and fifth triangles, here opposite and coalesced with each other. Outer and inner re-entrant angles about equally deep, as they are in the second molar, which has the usual *Ecotomys* pattern. Last molar with its outer re-entrants much deeper than usual, nearly as deep as the inner ones.

Dimensions of the type (measured in the flesh by Mr. Gordon Smith):—

Head and body 79 mm. ; tail 54 ; hind foot 17.5 ; ear 10.

Skull : greatest length 24.3 ; basilar length 20.7 ; zygomatic breadth 14.6 ; nasals 7.2 × 3.3 ; interorbital breadth 3.9 ; breadth of brain-case 10.3 ; height of brain-case from basion 6.5 ; palate length 11 ; diastema 6.8 ; palatal foramina 4.2 × 1.4 ; antero-posterior length of bullæ 5 ; length of upper molar series (crowns) 5, of m^3 1.6.

Hab. Kobe, Hondo. Alt. 650 m.

Type. Male. B.M. no. 5. 3. 3. 49. Collected 24th February, 1904. One specimen only.

"Under pine-trees, in bamboo-grass."—*R. G. S.*

This vole, representing a new subgenus, forms a most interesting addition to the known fauna of Japan, and I have much pleasure in connecting its donor's name with it.

LXIV.—*Notes on Eastern Heterocera, with Descriptions of new Genera and Species.* By Colonel CHARLES SWINHOE, M.A., F.L.S., &c.

Family Syntomidæ.

Euchromia plagosa, nov.

♀. Frons white, tegulae orange ; patagia and band at base of abdomen greyish yellow, next segment black, the third metallic blue with a white spot in the middle, the next two orange, intersected by a black line, the last two black with blue bands in them : fore wings with some metallic-blue marks at the base, both wings with similar marks at the ends of the cells ; spots white, a short longitudinal mark below the cell near the base, two spots in and below middle of cell (the latter the larger), two between veins 3 and 5, and one below vein 6 : hind wings with a short subcostal white